

Comparisons of Job Characteristics

Focus Occupation: [Computer Programmers \(15-1021\)](#)

Associated Occupation: [Computer Software Engineers, Systems Software \(15-1032\)](#)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 92

Focus Occupation: Computer Programmers (15-1021)

Associated Occupation: Computer Software Engineers, Systems Software (15-1032)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Computers and Electronics	8.4	23.1	24.2	0 Current knowledge level may be sufficient
Engineering and Technology	5.7	14.6	5.7	<< Extensive education and/or training may be required
Customer and Personal Service	11.3	11.8	9.0	<< Extensive education and/or training may be required
Design	5.2	10.9	8.2	<< Extensive education and/or training may be required
Telecommunications	3.9	8.3	4.8	<< Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 88

Focus Occupation: Computer Programmers (15-1021)

Associated Occupation: Computer Software Engineers, Systems Software (15-1032)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation
Programming	2.2	12.6	17.3	>> Skill level is likely more than sufficient
Operations Analysis	5.0	12.0	10.1	< A higher skill level may be required
Systems Evaluation	6.4	10.7	10.1	0 Current skill level may be sufficient
Systems Analysis	6.5	10.2	9.2	< A higher skill level may be required
Technology Design	2.6	8.1	6.2	< A higher skill level may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 97			
Focus Occupation: Computer Programmers (15-1021) Associated Occupation: Computer Software Engineers, Systems Software (15-1032)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Oral Comprehension	12.5	14.5	12.8	<	Some improvement in abilities may be required
Written Comprehension	11.0	13.8	13.8	0	Current ability level may be sufficient
Deductive Reasoning	10.6	12.6	12.2	0	Current ability level may be sufficient
Written Expression	9.8	12.3	10.3	<	Some improvement in abilities may be required
Inductive Reasoning	10.2	11.8	11.6	0	Current ability level may be sufficient
Information Ordering	9.9	11.4	12.8	>	Current ability level is likely sufficient
Mathematical Reasoning	6.3	9.8	10.2	0	Current ability level may be sufficient
Originality	7.6	9.3	8.7	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 91
Focus Occupation: Computer Programmers (15-1021) Associated Occupation: Computer Software Engineers, Systems Software (15-1032)		
Work Activities	Exclusivity of Activity	
Adjust computer operation system	84	
Communicate technical information	4	
Consult with customers concerning needs	69	
Design computer hardware or software interface	87	
Develop computer performance standards	87	
Develop mathematical or computer languages	89	
Develop or maintain databases	30	
Develop tables depicting data	33	
Evaluate computer system user requests or requirements	81	
Follow data security procedures	77	
Follow data storage procedures	75	
Prepare technical reports or related documentation	22	
Program computers for electronic engineering applications	87	
Program mainframe computer	84	
Provide technical computer training	82	

Recommend software or hardware purchases	85
Revise or correct errors in computer programs, software, or systems	85
Test computer programs or systems	78
Use computer programming language	82
Use computers to enter, access or retrieve data	3
Use knowledge of mainframe computers	78
Use project management techniques	47
Use spreadsheet software	18
Write computer software, programs, or code	84
Write documentation for computer programming	87

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus
Occupation to Associated
Occupation: 92

Focus Occupation: Computer Programmers (15-1021)

Associated Occupation: Computer Software Engineers, Systems Software (15-1032)

Tools and Technologies	Exclusivity
Business function specific software	1
Computers	1
Content authoring and editing software	1
Content management software	6
Data management and query software	1
Development software	4
Industry specific software	1
Network applications software	1
Operating environment software	12

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.